

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/017969

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G21K5/00 B01J19/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G21K B01J F01N B01D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 639 401 A (THE BOC GROUP PLC; THE UNIVERSITY OF BIRMINGHAM) 22 February 1995 (1995-02-22) abstract; claim 2; figures 1,2; table 1	1,5-7, 10,11, 13-15,20
Y	-----	2-4,8,9, 12,16,21
Y	EP 0 989 577 A (MATSUSHITA ELECTRIC WORKS, LTD) 29 March 2000 (2000-03-29) paragraph '0026! -----	2,12,21
Y	US 6 345 497 B1 (PENETRANTE BERNARDINO M) 12 February 2002 (2002-02-12) column 5, lines 32,58; figure 1 -----	3,8,9 -----

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

6 September 2005

Date of mailing of the international search report

22/09/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
Fax: (+31-70) 340-3016

Authorized officer

Oestreich, S

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/017969

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 05, 3 May 2002 (2002-05-03) & JP 2002 006094 A (EBARA CORP), 9 January 2002 (2002-01-09) cited in the application abstract -----	4,16
A	US 4 305 000 A (CHEEVER ET AL) 8 December 1981 (1981-12-08) -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

 International Application No
 PCT/JP2004/017969

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 0639401	A	22-02-1995	AT	200036 T	15-04-2001
			DE	69426955 D1	03-05-2001
			DE	69426955 T2	23-08-2001
			EP	0639401 A1	22-02-1995
			ES	2156138 T3	16-06-2001
			JP	3524590 B2	10-05-2004
			JP	7171382 A	11-07-1995
			US	5608197 A	04-03-1997
EP 0989577	A	29-03-2000	JP	2966842 B2	25-10-1999
			JP	2000100316 A	07-04-2000
			JP	3079097 B2	21-08-2000
			JP	2000306494 A	02-11-2000
			AT	259097 T	15-02-2004
			CN	1249525 A ,C	05-04-2000
			DE	69914556 D1	11-03-2004
			DE	69914556 T2	23-12-2004
			DK	989577 T3	08-03-2004
			EP	0989577 A2	29-03-2000
			ES	2213320 T3	16-08-2004
			KR	2000023410 A	25-04-2000
			SG	74751 A1	22-08-2000
			TW	436836 B	28-05-2001
			US	6590321 B1	08-07-2003
			US	2003197457 A1	23-10-2003
US 6345497	B1	12-02-2002	NONE		
JP 2002006094	A	09-01-2002	NONE		
US 4305000	A	08-12-1981	AT	4171 T	15-08-1983
			AT	21301 T	15-08-1986
			AU	530337 B2	14-07-1983
			CA	1118180 A1	16-02-1982
			CA	1128724 A2	03-08-1982
			CA	1128725 A2	03-08-1982
			DE	2965947 D1	25-08-1983
			DE	2967614 D1	11-09-1986
			DK	464379 A	04-05-1980
			EP	0011414 A1	28-05-1980
			EP	0054016 A2	16-06-1982
			ES	8100845 A1	16-02-1981
			ES	8101892 A1	01-04-1981
			JP	1302387 C	14-02-1986
			JP	55120872 A	17-09-1980
			JP	60019618 B	17-05-1985
			RU	2052224 C1	10-01-1996
			US	4367412 A	04-01-1983